2 ♀. Not rare throughout the higher Rockies, and in the foothills in British America.

Melicleptria villosa Grt.

1 ♀. Common in the Colorado Rockies.

Drasteria erechtea Cramer.

1 ♀. Common everywhere.

NOTES ON THE SPECIES OF MACROPSIS AND AGALLIA OF NORTH AMERICA.

BY E. D. BALL, FORT COLLINS, COLO.

In 1898 Osborn and Ball published a review of the species of Agallia* in which thirteen species were included. A few months later Mr. C. F. Baker in a paper on the genus † described six species and one variety as new. Of these, five are synonyms of species included in our synopsis, leaving two to add to the list. The present paper adds three more, making eighteen strictly N. A. species, to which might be added five species by Uhler from St. Vincent Isd. though not strictly within our territory.

Agallia modesta O. & B.

Agallia mexicana Baker. Baker's specimens were from the same locality (Vera Cruz) from which *modesta* was described, and agree in every respect, except that he gives the last ventral segment of the ♀ as "slightly concave."

If he had followed his own elaborate directions for viewing this segment (Ent. News Mch. '99, p. 91–92) he would have found it truncate as originally described. In his remarks after the description 4-*notata* (used twice) should read 4-*punctata* and "this" in the last sentence should certainly be "these" instead.

Agallia producta O. & B.

Agallia heydei Baker. This species of Baker's was also described from the same locality from which the corresponding one of ours came. A comparison of the descriptions will satisfy anyone of their identity. In his description of the female segment he says "to a shallowly notched apex." The original description reads "truncate but often angularly elevated, giving the appearance of a slight median notch." Did he follow his own directions that time? The name 4-*notata* occurs three times in this description; there has been no species described under that name. He must certainly mean 4-*punctata* Prov.

* A review of the N. A. Species of Agallia. Proc. Dav. acad VII, pp. 45-64. Authors Separata mailed Jan. 26, 1898.

† PSYCHE, April, 1898.

Agallia tenella O. & B.

Agallia producta Baker. The very distinct genitalia of the ♀ will at once distinguish this species. Both were described from Vera Cruz, probably from the same locality. The name *producta* could not stand in any case as it is preoccupied by the preceding species. Baker failed to mention how many specimens the description was based upon, a very important point, both with regard to the accuracy of the determination and the amount of variation to be allowed for. In this case, that he possessed one specimen of each sex, may be told by the description, but in his *anomala* the same omission exists, and the female alone is described, probably from a single example, the only distinctive feature being genitalia that might easily be the result of accident or imperfect development.

Agallia oculata V. D.

Male genitalia: — plates longer and narrower than in *tenella*, slightly, laterally emarginate at the base and enclosed by the swollen pygofers, the long, bluntly-rounded, upturned tips pressed so closely together that the suture is scarcely visible.

The male genitalia were not described in our synopsis of the group for lack of material. *A. oculata* is now known from Calif. and Mexico City, Mex.

Agallia reticulata n. sp.

Form of *novella* — but much smaller; tawny olive with ivory white markings and reticulations. Length 3 mm.; width 1 mm.

Vertex and face pale creamy yellow, a line on vertex just inside either eye, an oblique dash on either side the white apex, sometimes curving outward on the posterior margin, black; the ocelli, a pair of spots above them, a median line sometimes abbreviated to a third spot in line with the other two, a spot above each antennal pit and the lateral margins of the front, tawny orange. Pronotum tawny olive, the posterior margin narrowly light, lateral margin broadly so, a finger-like light process running from the humeral angle towards the inner corner of the eye, a broad median light stripe running forward from the posterior margin and triangularly widening on the disc and then truncately narrowing, continued as a round spot, the entire stripe divided by a slender tawny stripe, the margins of the white stripe sometimes narrowly lined with fuscous. Elytra tawny olive, the veins and numerous vein-like reticulations broadly white in strong contrast.

Genitalia; ultimate ventral segment of ♀ long, with a distinct median carina, the posterior margin in two evenly rounded lobes; male valve short, truncate, plates small, triangular.

Described from twelve specimens from Hayti (Crew) taken in Jan. and Feb. This species may be readily known by the reticulate veined elytra.

Agallia clitellaria n. sp.

Form of *novella* but much smaller, smaller than *reticulata*, narrow wedge-shaped. Black with light testaceous markings on head and pronotum and a lemon yellow saddle on the elytra. Length 2.5 mm.

Vertex and face black, a large pentagonal spot surrounding a small, round, black one at tip of vertex, a row of three small spots between this and the eye on either side, an oval spot on the base of the front, another on the disc, a triangular spot just inside the

antennae and another above the lorae, testaceous orange. Pronotum fuscous or black, a pair of large pupillate spots on the anterior half of the disc and a few irregular spots toward the humeral angles, testaceous. Scutellum black, the apex and a pair of spots on the lateral margins yellow. Elytra black, a bright lemon yellow saddle extending from apex of scutellum two-thirds the distance to the apex of clavus and laterally nearly to the costa, basal and apical veinlets marked with yellow.

Genitalia;—ultimate ventral segment of ♀ half longer than penultimate, the posterior margin nearly truncate, very slightly notched in the middle.

Described from a single female taken at Port au Prince, Hayti in Feb. by Mr. Crew. The yellow saddle renders this so distinct and well marked a species that I have no hesitancy in describing it from a single example.

Agallia barretti n. sp.

Intermediate in character between *4-punctata* and *sanguinolenta* groups. Black with a few light markings. Length 4 mm.; width 1.5 mm.

Vertex very narrow as seen from above, evenly rounding, parallel margined, not extending behind the eyes; front broad above, produced over the antennal sockets, rapidly narrowing below, genae narrow scarcely extending beyond inner margin of eye, sharply angled, the margins straight; pronotum finely granulated, faintly transversely rugulose; elytra broad and stout, venation as in *4-punctata* with a few irregular veinlets, the outer claval nervure forked behind.

Color; dead black, four equidistant points on the posterior margin of the vertex, an interrupted circle around each ocellus, a large irregular spot on the base of the front, a smaller one on the margin below each antenna, the inner margin of the eyes and the outer margin of the genae, white or pale yellow; pronotum with three pale points in a triangle on the disc; elytra dark fuscous to black, the cross-nervures between the sectors and nearly all the nervures beyond the middle irregularly mottled with white.

Genitalia; ultimate ventral segment of the ♀ slightly longer than the penultimate, lateral margin straight, posterior margin broadly rounding, a faint median notch.

Described from two females from Cuernavaca, Mex., from O. W. Barrett who has supplied me with a large amount of good material. The irregular venation and the forked claval nervure will separate this from any of the *sanguinolenta* group, to which it must be referred.

Agallia cinerea O. & B.

A. sanguinolenta var. *inconspicua* Baker. This species is now known from Ia., Colo., Calif., Ariz., and Mex. The Arizona specimens are larger than the types or than Baker describes.

Agallia peregrinans Stål.

Agallia lyrata Baker. Baker's description evidently applies to the form that we have determined as the above. It was described from Calif. yet he describes two more species from the same place, in the same group, without making any provision for it. It occurs from Vancouver to southern California.

Macropsis Lewis.

Oncopsis Burm., *Stragania* Stål, *Pachyopsis* Uhl., *Gargaropsis* Fowl.

W. W. Fowler in his work on the

Membracidae of the Biologia* described as a new genus and species *Gargaropsis innervis* which he placed in Centrotinae remarking that it was "one of the puzzling genera which appear to be rightly placed at the end of the Centrotinae and which on the other hand scarcely appear to be true Membracids." "The present genus is very distinct from any other described and does not seem to have any very striking affinities." Certainly not in Membracidae. It is a typical *Macropsis* by description and figure and from its size may be distinct from either of Stål's species.

It is rather a sad commentary on the accuracy of Fowler's work in the Biologia on Jassidae at least, which he is just beginning, that he should have described as one of the Membracidae a well known Jassid genus of almost world wide distribution, two species of which occur commonly in his own country.

Mr. Baker in a recent paper on the genus† described six species as new to North America. He was evidently not aware of Osborn and Ball's description of *apicalis* from Iowa‡ described two years before his paper, nor of Fowler's species from Mex. of three years before, as he mentioned neither of them in his distribution of the species.

Most of his new species were based on a very meager amount of material and are of very doubtful validity when compared with a larger series of specimens.

His *alabamensis* is *apicalis* O. & B. The white hair, dark suture, and three apical dots on elytra as well as the genitalia readily distinguish this species. His *rufoscutellata* (*us*) seems to be identical with specimens from Vera Cruz, Mex., the males of which fit Stål's description of *missella* (founded on a male) in every particular. It is a common Colo. species from the first foot hills up to 9000 ft. It varies much in the amount and depth of color on scutellum and clavus. Some specimens from both Colo. and Mex. have only a trace of testaceous while in others most of the clavus is covered with dark fuscous.

The species he described as *californica* (*us*) occurs very commonly here in Colo. It is also variable in size and color in a large series, some females being entirely pale green while others are very heavily marked with black. The elytra in these specimens very rarely show supernumerary veins, the notch in the female segment varies from rectangular, to rounding with a broad median tooth. A slight notch in this tooth would complete the variation necessary to form his *magna* (*us*) which was founded on a single female, undoubtedly only variety of his *californica*. I fail to comprehend what he means by "Pronotum without distinct supernumerary veins."

His *atra* is undoubtedly only another color variation of the *californica* male,

*Biologia Centrali Americana. Rhynch. Homop. Vol. II, p. 167. Pl. X.

†On some N. A. Species of Macropsis. PSYCHE, May 1900.

‡ Proc. Dav. Acad. Nat. Sc. VII, p. 64, Pl. II fig., 1,—Jan. 1898.

as he had but one male of each variety and it would be exceptional to find two from even the same locality exactly alike in color pattern. Baker suggests that *atra* may prove but a variety of *humilis* Stål, a suggestion that is undoubtedly correct as I have examined males from Vera Cruz that do not differ from the Colo. specimens except that they are slightly smaller, and this is also the case in *missella* the only other species occurring in both places.

Macropsis laeta Uhl.

var. paeta n. var.

Differs from typical laeta only in color. In life the whole insect is suffused with reddish, the hyaline elytra allowing the stronger color of the abdomen to show through. Dried specimens are of a delicate pink. This pink variety of a green species is analogous to the pink Katydid.

Summed up according to the above synonymy, the specific limits and distribution will be as follows. (The generic synonymy is given above.)

M. laeta Uhl. and var. **paeta** nov.

Known only from Colo.

M. apicalis O & B.

M. alabamensis Baker.

Iowa and Alabama.

M. robustus Uhl.

Ala. La. Texas, N. Mex., Ariz., Calif. and Colo.

M. missella Stål.

M. rufoscutellata Baker.

Colo., N. Mex. and Vera Cruz, Mex.

M. humilis Stål.

M. atra Baker, *M californica* Baker, *M. magna* Baker.

Colo., Calif. and Vera Cruz.

M. innervis Fowler.

Mex. — Unknown in nature. Its description (as a Membracid) not giving specific characters. It may fall under one of the other species.

M. (?) idioceroides Baker.

N. Mex. — I doubt very much whether it belongs to the genus at all.

LIFE HISTORIES OF NORTH AMERICAN GEOMETRIDAE.—XVI.

BY HARRISON G. DYAR, WASHINGTON, D. C.

Euchloena serrata Dru. The larva is here described for the first time.

Egg. Laid loosely, rolling around in the tumbler like sand. In nature doubtless falling upon the ground. Elliptical, not flattened, but of less diameter on one direction, both ends rounded, one (micropylar) slightly more flattened. Reticulations large, about 12 the length of the egg, very strongly raised, forming ridges, the reticulations wider than long and arranged in nearly straight rows the length of the egg, forming longitudinal waved ridges, which are, however, exactly like the cross striae except that the latter are alternating. Joinings of reticulations with white points in oblique view, not seen from above. Surface finely shagreened. Bright bluish green, later dark red. Size .8 × .5 × .4 mm.

Stage I. Head round, pale brownish, mottled, slightly darker in a line above the black ocelli, and with whitish over the face; width about .3 mm. Body rather short, not slender,